Claims

1. Movement detector with six degrees of freedom comprising a support (1) on which three position sensors (2a), (2b) and (2c) are arranged disposed along three axes, each sensor comprising a rigid body (3), conducting areas (6b) disposed on the rigid body (3) and an electrically conducting deformable element (4) presenting a rest position wherein it is isolated from the conducting areas (6b), and moving from the rest position to an active position in response to a high-speed movement of predetermined direction and orientation, detector characterized in that the deformable element (4) is in equilibrium around its central part and comprises a plurality of active positions, each active position corresponding to two degrees of freedom, the deformable element being temporarily in contact with two of the conducting areas (6b) in each active position.

2. Detector according to claim 1, characterized in that the three axes are orthogonal.

3. Detector according to one of the claims 1 and 2, characterized in that the high-speed movement is a translation.

4. Detector according to any one of the claims 1 to 3, characterized in that the high-speed movement is a rotation.

5. Detector according to any one of the claims 1 to 4, characterized in that it comprises an electronic processing circuit (15) connected to the conducting areas (6b) of the three sensors.

6. Detector according to any one of the claims 1 to 5, characterized in that the deformable element (4) is a beam in equilibrium around its transverse median axis.

7. Detector according to claim 6, characterized in that the beam comprises conducting areas (6a) at its ends.

8. Detector according to claim 7, characterized in that, in first and second active positions, the deformable element (4) bends so that the ends thereof come simultaneously into contact with two conducting areas (6b) both arranged on a same inside wall of the rigid body (3).

9. Detector according to one of the claims 7 and 8, characterized in that, in third and fourth active positions, the deformable element (4) pivots so that the ends thereof come simultaneously into contact with first and second conducting areas (6b) respectively arranged on top and bottom inside walls of the rigid body (3).

10. Detector according to any one of the claims 1 to 5, characterized in that the deformable element (4) is a disc in equilibrium around its central axis.

11. Detector according to claim 10, characterized in that the disc comprises a peripheral conducting area (6a) on each of the faces thereof.

12. Detector according to any one of the claims 1 to 11, characterized in that the deformable element (4) is electrically connected to a power supply contact area (10) arranged on the rigid body (3) of the sensor.

13. Detector according to any one of the claims 1 to 12, characterized in that the deformable element (4) is in an equilibrium position corresponding to the rest position of the sensor for any movement the acceleration whereof is less than or equal to the force of gravity G.

14. Detector according to any one of the claims 1 to 13, characterized in that the rigid body of a sensor comprises two substrates (7a) and (7b) arranged face to face, connected by balls (8) constituting an electrical interconnection between the conducting areas (6b) of one of the substrates (7a) and output electrical contact areas (9) formed on the other substrate (7b).

15. Detector according to claim 14, characterized in that the deformable element (4) is formed by two deformable half-elements comprising a conducting layer (12), supported by a central pillar (11), formed on a central power supply contact area (10) formed on the corresponding substrate (7a, 7b).

16. Method for production of a sensor according to claim 15, characterized in that it is achieved by microelectronics techniques and comprises:

- formation on each of the substrates (7a, 7b) of conducting areas (6b), of power supply contact areas (10) and, on one of the substrates (7b), of output electrical contact areas (9),
- formation on each of the substrates (7a, 7b) of a central pillar (11) in contact with the power supply contact area (10) and supporting a conducting layer (12) designed to form a deformable half-element,
- installation of balls (8) on the output electrical contact areas (9),
- hybridization of the two substrates (7a) and (7b) arranged face to face.